REPORT: FE-18-97

RAILROAD: Union Pacific Railroad Company (UP)

LOCATION: Portland, Oregon

DATE, TIME: June 24, 1997, 4:30 a.m., PST

PROBABLE CAUSE:

Switch Foreman was struck by a moving car after placing himself between cars to release a hand brake.

EMPLOYEE:	**Craft.....**	**Transportation**
	Activity.....	Switching
	Occupation.....	Switch Foreman
	Age.....	53 years
	Length of Service.....	28 years
	Last Rules Examination.....	June 12, 1995
	Last Safety Training.....	Oct. 18, 1996
	Last Physical Examination.....	October 1993

Circumstances Prior to the Accident

Following completion of a required off-duty period, the employee went on duty at 11:59 p.m., on June 23, at Brooklyn Yard. The employee was assigned the Switch Foreman's position in a Crew comprising an Engineer, Switch Foreman, and Helper. The Crew was called to work Yard Switching Assignment No. YEXS-810, which required an 8-hour shift, to perform switching operations at Brooklyn Yard using Locomotive SP 2677. The Foreman was observed by fellow employees, who indicated that he had appeared to be fit for duty.

The Crew performed various switching operations during the shift with no unusual occurrences. At approximately 4 a.m., the Crew received instructions to collect cars off the south end of three tracks in the yard and place the entire group of cars onto Track No. 2. (Geographic direction is used throughout this report, although geographic north is railroad timetable east.) The Crew gathered the 14 cars, including three 5-platform, articulated, intermodal rail cars, and were pulling the cars south on the lead to clear the switch, providing access to Track No. 2. The movement was stopped due to a switching move occupying the lead ahead. The Foreman remained with the locomotive. The Helper walked over to the south end of the cars standing on

Track No. 2. He wanted to be in position to make the coupling when the Crew started shoving the cut of cars they were moving onto Track No. 2.

Approximately 10 minutes later, the freight train cleared the lead ahead of the Switch Crew. The Engineer contacted the Foreman by radio and told him that he was ready to continue the movement south. The Foreman acknowledged the transmission and told the Engineer to start pulling. Although the Engineer could not see the Foreman at the time of the radio conversation, he believed he was standing on the east side of the cut of cars near the locomotive.

The Engineer stated that he began pulling the cars at a speed between 3 and 7 mph. As the movement continued, the Foreman was having a radio conversation with the Yardmaster. The Foreman reported that components of a railroad end-of-train-telemetry device were lying on the ground in the toe path (walkway) near where the Foreman was working. The Yardmaster said that the Car Department had been instructed to remove it. The Foreman responded "Okay."

Weather conditions were dark and clear, and the temperature was 52º F.

The Accident

A few minutes later, the Helper attempted to contact the Foreman by radio. The Foreman did not respond. The Helper made a second transmission and still received no response. The Helper then contacted the Yardmaster and asked him to try to contact the Foreman. The Helper thought the Foreman's radio may not have been working properly. The Yardmaster made two attempts and received no response.

The Helper then called the Engineer and asked if he was still pulling south. When the Engineer said that he was, the Helper told him to stop the movement. The Helper then started walking south up Track No. 2 toward the lead switch. He intended to find the Foreman and inform him about his malfunctioning radio. At approximately 4:30 a.m., the Helper found the employee lying face up next to the rail on the east side of the lead near the switch providing access to the yard tracks. The trailing car of the cut of cars they were pulling stopped about 365 feet south of the location where the Foreman lay. The Helper contacted the Yardmaster and told him that he had found the Foreman lying by the track and asked him to call for emergency help.

The Portland Police Department received notification at 4:30 a.m. Paramedics arrived at the scene at 4:36 a.m. The Coroner was notified at 4:43 a.m. and arrived at 5:03 a.m. The employee was pronounced dead at the scene.

Please see the attached diagrams of Brooklyn Yard to better visualize the accident scene and chain of events that led up to the fatality.

Post-Accident Investigation

The Multnomah County Medical Examiner's Office performed an autopsy. The Autopsy Report and Death Certificate stated the cause of death as "Multiple Injuries." Mandatory toxicological testing of the deceased was performed under the authority of 49 CFR Part 219 Subpart C. The results were negative.

Union Pacific officials found a battery-powered lantern lying approximately eight feet, six inches from the body. The lantern was in the ***on*** position and operating. The end-of-train telemetry device that was lying on the ground in the work area was not involved in the accident. It was located 80 feet away from the Foreman's body and on a separate lead. It was not in a position where the employee could have tripped on the device to fall into the path of the cars.

Inspection of the next to last car (TTOX 145923), of the cars being moved, revealed the hand brake had been applied. The hand brake and its release handle were located at the trailing end of the car and just east of the center. The hand brake's release handle could only have been accessed by either going on the car or by standing on the ground at the end of the car. Standing on the ground at the end of the car would have placed an individual between this car and the last car in the cut. FRA's examination of the safety appliances revealed nothing that could have caused or contributed to the accident.

Inspection of the last car (NS 157024) revealed evidence of body tissue on the east side of the leading wheels. The evidence indicated that the Foreman, while trying to release the hand brake from the preceding car, either fell from a position on the trailing end of the car or had placed himself between the cars and lost his footing. He then was struck by the following car.

The railroad reported no damage to equipment as a result of the accident.

The Western Region Timetable No. 1, effective April 14, 1996, authorized a maximum speed of 10 mph on this yard lead. However, the locomotive was not equipped with an event recorder to identify the speed of the train.

In response to this fatality, UP's Portland Division implemented Accident Prevention Alert No. 11, which reviewed possible causes of the fatality and the applicable safety rules when releasing hand brakes or working around moving equipment. The railroad also conducted safety meetings with all employees to discuss the accident.

UP cited the following Operating Rules as applicable:

70.32.4 Employees must maintain a safe distance from equipment and not cross or step foul of tracks closely in front of or behind moving equipment, or close to the end of equipment; go between equipment if the opening is less than one car length; or

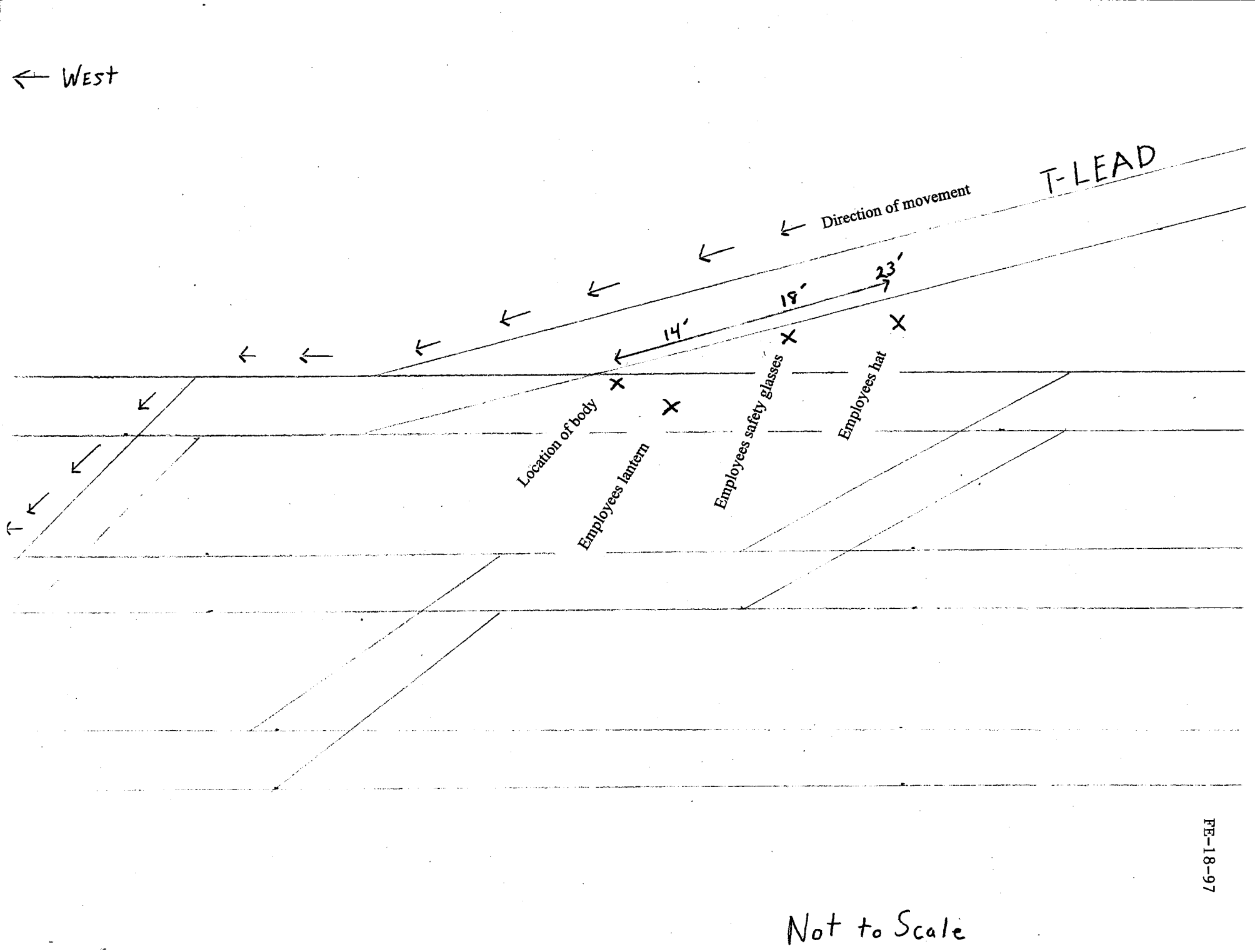
cross tracks in front of or behind standing equipment unless there is at least 20 feet between the employee and the equipment.

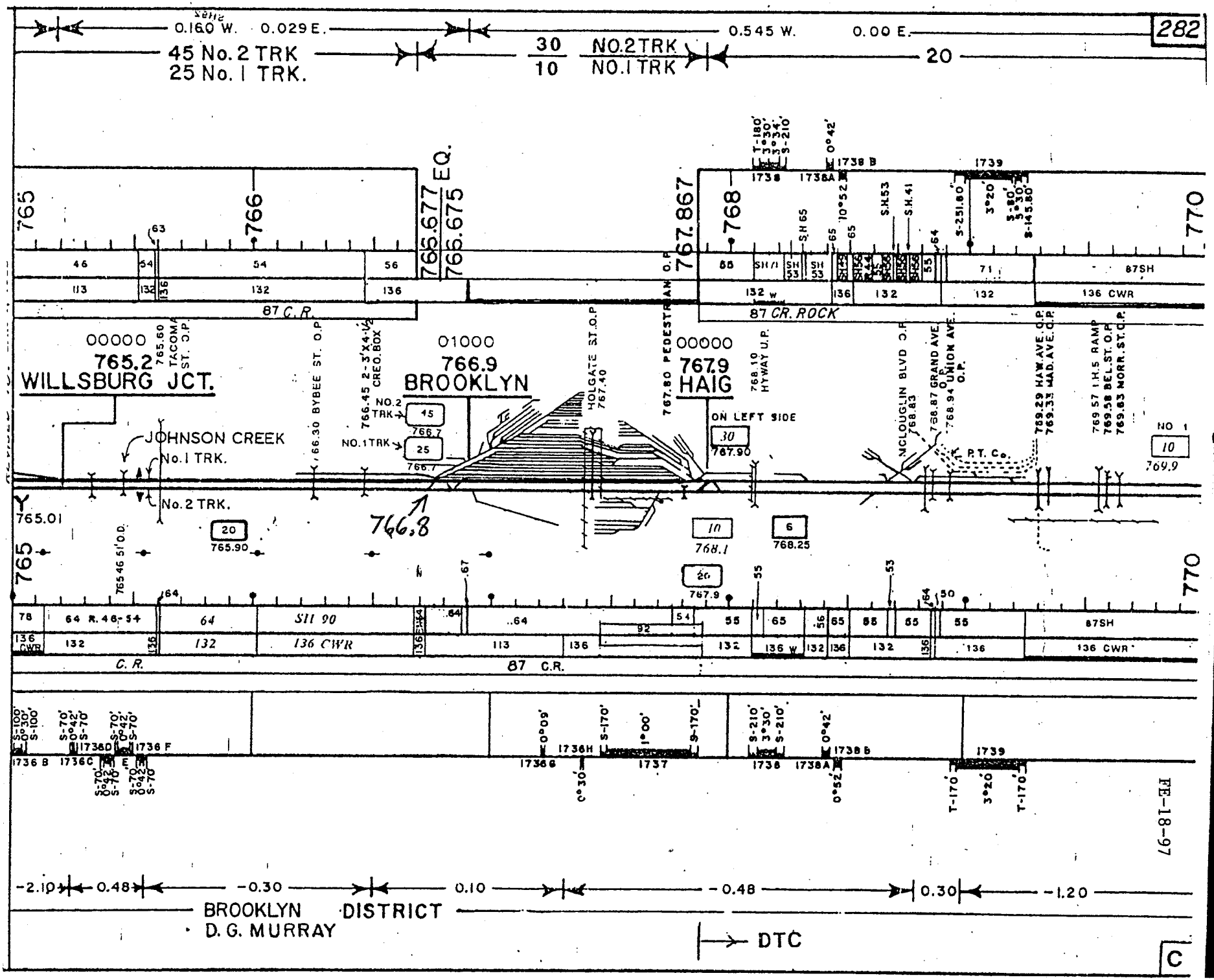
80.21.1 Employees must not go between or in front of a moving engine or car to uncouple, open, close, or arrange knuckles or couplers; to manipulate other appliances; or for any other reason.

81.17 [Investigators were unable to determine whether this rule applied to this particular accident, but UP found it important to include in the safety meetings.] Employees operating hand brakes must inspect the pawl, ratchet, and brake wheel for defects. Employees must have firm footing and hand hold to prevent slipping, falling, or injuries (e.g. sprains, strains).

Employees climbing on cars or applying hand brakes must maintain at least a 3-point contact with the car. Three-point contacts comprise both feet and one hand ***or*** both hands and one foot touching the car.

While applying or releasing hand brakes on cars, employees must: not use end ladders to go up or down the car; not step directly from the side ladder to the brake step, nor from the brake step to the side ladder without first placing feet firmly on the end ladder tread; not brace any part their body against another car; have one hand securely grasping the hand hold while the other hand is operating the brake; obtain firm footing and never place feet in a wheel or on a hand brake pawl; not place stress on hand brakes at the moment when coupling impact may move the car; not hold brake tension on a moving car by hand without using pawl and rachet; use caution when releasing hand brakes; obtain help when necessary; avoid being struck by the brake wheel when the pawl is released; and avoid having clothing or hands caught in the spinning brake wheel.


← West
T-LEAD
Direction of movement
14'
19'
23'
Location of body
Employees lantern
Employees safety glasses
Employees hat
FE-18-97
Not to Scale


282
0.160 W.
0.029 E.
45 No. 2 TRK
25 No. 1 TRK.
30
10
NO.2 TRK
NO.1 TRK
0.545 W.
0.00 E.
20
765
766
766.677 EQ.
766.675
767.867
768
770
87 C.R.
87 CR. ROCK
00000
765.2
WILLSBURG JCT.
765.60 TACOMA ST. O.P.
66.30 BYBEE ST. O.P.
766.45 2-3'X4-1/2 CREO. BOX
01000
766.9
BROOKLYN
HOLGATE ST. O.P.
767.40
767.80 PEDESTRIAN O.P.
00000
767.9
HAIG
768.10 HYWAY U.P.
ON LEFT SIDE
768.83
768.87 GRAND AVE. O.P.
768.94 UNION AVE. O.P.
NCLOUGLIN BLVD O.P.
P.T. Co.
769.29 HAW. AVE. C.P.
769.33 MAD. AVE. C.P.
769.57 I.H.5 RAMP
769.58 BEL. ST. O.P.
769.83 NORR. ST. O.P.
NO 1
769.9
JOHNSON CREEK
No. 1 TRK.
No. 2 TRK.
765.01
765.46 51' O.D.
766.8
765.90
768.1
768.25
767.90
767.9
FE-18-97
-2.10
0.48
-0.30
0.10
-0.48
0.30
-1.20
BROOKLYN DISTRICT
D. G. MURRAY
DTC
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